

We claim:

1 1. An optoelectronic receiver having an optic axis (54) and comprising
2 a device (12) for taking in optical signals having an optic axis (54');
3 an optical sensor (16) for converting the optical signals into electronic
4 signals when the optical signals fall on a sensitive surface (14) of said optical
5 sensor (16);
6 a coupling element (26) for alignment of the optic axis (54') of the device
7 (12) for taking in the optical signals on the sensitive surface (14) of the optical
8 sensor (16);
9 a holder (42) for the device (12) for taking in the optical signals;
10 a retaining device (24) for the coupling element (26); and
11 a joint adjusting means (28) for adjusting the holder (42) for the device for
12 taking in the optical signals and the retaining device (24) for the coupling
13 element.

1 2. The optoelectronic receiver as defined in claim 1, wherein said adjusting
2 means (28) comprises an optical bench (30). said optical bench (30) is provided
3 with a predetermined upper surface (32) and the upper surface (32) of the optical
4 bench (30) is a means for aligning the coupling element (26) and the device (12)
5 for taking in the optical signals.

1 3. The optoelectronic receiver as defined in claim 2, wherein the retaining device
2 (24) is provided with a flat guiding surface (34) that rests on the upper surface
3 (32) of the optical bench (30).

1 4. The optoelectronic receiver as defined in claim 1, wherein said holder (42)
2 surrounds or embraces the retaining device (24).

1 5. The optoelectronic receiver as defined in claim 2, wherein the holder (42) has
2 a flat guiding surface (52), which contacts or rests on the upper surface (32) of
3 the optical bench (30).

1 6. The optoelectronic receiver as defined in claim 2, wherein said upper surface
2 (32) of said optical bench (30) has a predetermined angular position relative to
3 the optic axis (54) of the optoelectronic receiver (10).

1 7. The optoelectronic receiver as defined in claim 6, wherein in said
2 predetermined angular position of the optic axis (54) is perpendicular or at 90°
3 relative to said upper surface (32).

1 8. The optoelectronic receiver as defined in claim 1, consisting of an aligned
2 optoelectronic receiver apparatus and further comprising means (62) for

4 relative to each other after an adjustment procedure to align the optical signals
5 on the sensitive surface of the optical sensor.

1 9. The optoelectronic receiver as defined in claim 8, further comprising means for
2 generating an optical test signal (56) for self-adjustment of the optoelectronic
3 receiver.

1 10. A method of making an aligned optoelectronic receiver (10), said
2 optoelectronic receiver (10) comprising having an optic axis (54) and comprising
3 a device (12) for taking in optical signals having an optic axis (54'); an optical
4 sensor (16) for converting the optical signals into electronic signals when the
5 optical signals fall on a sensitive surface (14) of said optical sensor (16); a
6 coupling element (26) for alignment of the optic axis (54') of the device (12) for
7 taking in the optical signals on the sensitive surface (14) of the optical sensor
8 (16); a holder (42) for the device (12) for taking in the optical signals; a retaining
9 device (24) for the coupling element (26); and a joint adjusting means (28) for
10 adjusting the holder (42) for the device for taking in the optical signals and the
11 retaining device (24) for the coupling element, wherein said adjusting means (28)
12 comprises an optical bench (30), said optical bench (30) is provided with a
13 predetermined upper surface (32) and the upper surface (32) of the optical bench
14 (30) comprises means for aligning the coupling element (26) and the device (12)

holder (42) have respective guiding surfaces (34, 52) bearing on said upper surface (32) of said optical bench (30); said method comprising the steps of:

- a) providing a module (18) including the optical sensor (16), a housing (22) for the optical sensor, the coupling element (26) and the retaining device (24) for the coupling element and providing a passage (31) in the optical bench (30) for accommodating the module (18);
- b) placing the module (18) in the passage (31) in the optical bench (30);
- c) attaching the module (18) to the optical bench by laser welding or gluing;
- d) placing the holder (42) with the device (12) on the optical bench (30);
- e) inputting a test optical signal through the device (12) for taking in the optical signals;
- f) displacing the holder (42) relative to the optical bench (30) until a predetermined electrical signal is produced by the optical sensor (16) in response to the test optical signal by means of evaluation electronics (20), said electrical signal indicating attainment of an aligned configuration; and
- g) after the inputting of step e) and the displacing of the holder in step f), attaching the holder (42) to the optical bench (30) at attachment points (62) by means of laser welding or gluing, whereby said aligned optoelectronic receiver is formed.